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# NTT Optoelectronic Fusion Technology

## Overview

① Nippon Telecom operator NTT is reported to be jointly developing a semiconductor using "optoelectronic fusion" technology with US chip giant Intel; ② NTT and Intel will cooperate with semiconductor manufacturers to conduct technical cooperation for mass production of. In pursuit of the ultimate network performance (high capacity/high throughput, low power consumption, flexibility, and adaptability) and continual network innovation, we are engaged in research and development of advanced hardware (devices, circuits, implementations, and system architectures) that. Third-generation photonics-electronics convergence devices are intended to provide short-distance optical connections between racks and printed circuit boards (PCBs) in datacenters. With the increase in wide-bandwidth applications such as artificial intelligence, machine learning, augmented. PLC-based PBS-integrated coherent mixer : Integrate PBS and VOA and two 90 degree optical hybrids into one chip using highly reliable Silica-on-Si PLC. Tokyo - March 12, 2024 - On June 12, 2023, NTT Corporation (NTT) announced the establishment of NTT Innovative Devices Corporation to develop, design and manufacture photonic-electronic convergence (PEC) devices. NTT announced its new medium-term management strategy, "New value creation & Sustainability 2027 powered by IOWN.

# NTT Optoelectronic Fusion Technology

**Lineup of multi-core optical fiber construction, operation,**

We have made significant progress in solving construction, operation, and maintenance technology issues in an actual field environment, which were

**Over view**

We will continue to develop PEC-related technologies and actively develop products that meet the requirements of our customers in the growing areas of data centers and computing industries in

**Photonics-electronics convergence hardware technology, aimed at**

This combination of photonic and electronic technologies is thought to hold the key to further network innovation. Using these technologies, NTT aims to build a photonics network, a system that

**Photonics-electronics Convergence Devices Enabling**

This article presents second- and third-generation photonics-electronics convergence devices developed at NTT Device Innovation Center. The target applications and

**NTT Innovative Devices to Develop Photonic-Electronic**

These devices will advance NTT's deployment of its Innovative Optical and Wireless Network (IOWN) initiative to build high-speed, high-capacity,

**Micromachines , Special Issue : Optoelectronic Fusion**

Accordingly, this Special Issue aims to present research papers, communications, and review articles focusing on heterogeneous multi-dimensional fusion


**"Optimal Operation Technology for Fusion Reactors"**

"Optimal Operation Technology for Fusion Reactors" and "Space-based Solar Power Generation" Interview with Kazuya Akiyama, Group Leader NTT Space

**Photonics Products Lineup , Products / Tech Info**

Photonics of NTT Innovative Devices. NEL offers a vast array of products in the information, telecommunications, and multimedia fields - from key devices all the

**NTT & IOWN: Advancing Network Innovation**

Discover IOWN initiative, a photonic network revolutionizing communication with low latency and energy efficiency for a sustainable future.

**Optical packet switching technology**

Optical packet switching technology - Hybrid Optoelectronic Packet Router - Optoelectronics Integration Research Group Optical Packet switching enables the

**NTT Innovative Devices - Accelerating the introduction**

The company was launched as an advanced technology company to plan, design, develop, manufacture, and sell optoelectronic fusion devices, which

**A new generation of "optoelectronic fusion" semiconductors may be**

(1) Nippon Telecom operator NTT is reported to be jointly developing a semiconductor using "optoelectronic fusion" technology with US chip giant Intel; (2) NTT and Intel will cooperate with

**Photonics-Electronics Convergence Laboratory , NTT Device**

For the near future and far beyond, we push forward the research efforts to realize the photonics-electronics convergent technologies that can dramatically improve the networks various aspects

**The Future of Photonics-electronics Convergence**

Abstract This article presents a discussion on the forefront of photonics-electronics convergence technology, which is based on a technical seminar conducted at the

**NTT commercializes optoelectronic convergence technology at a new**

As part of this, a new company "NTT Innovative Devices Corporation" will be established in June for the early commercialization of optoelectronic convergence devices, which will be IOWN's

**Leading the World in Optical Devices and Photonics**

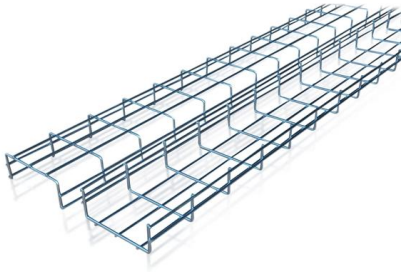
We asked Shinji Matsuo, an NTT Fellow at NTT Device Technology Laboratories and NTT Basic Research Laboratories, about the development of

**Semiconductor Breakthrough: NTT's Photo-electronic Technology to**

NTT's new technology is called "photonics-electronics convergence" which combines the functions responsible for electronic data processing and optical communication transmission to

**All-Photonics Network and Photonics-electronics**

NTT laboratories achieved a milestone in the development of photonics-electronics convergence technologies by fabricating an optoelectronic conversion device that



**New company to manufacture**

NTT Innovative Devices Corporation aims to plan, design, develop, manufacture, and sell devices incorporating "Photonics-Electronics Convergence

**Ultra-low-power-consumption optical circuits on a silicon**

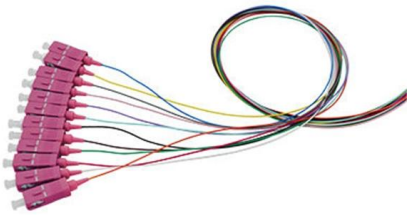
Silicon platform technology features advantages in microfabrication and mass production; therefore, it is attracting worldwide attention as a platform for

**Optoelectronic Subsystem Research Group|Device**

Optoelectronic Subsystem Research Group Research Group Introduction We are developing optical interconnect technology for high-speed and low-power

**Assessing Photoelectric Fusion Technologies: Market Potential and**

It analyzes the strategic, operational, and market engagement approaches of NTT, focusing on competitive threats, potential collaborations, and strategies to foster third-party development. The



**Assessing Photoelectric Fusion Technologies: Market Potential and**

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**[700 Companies Worldwide Flock to It] NTT's Optical Technology**

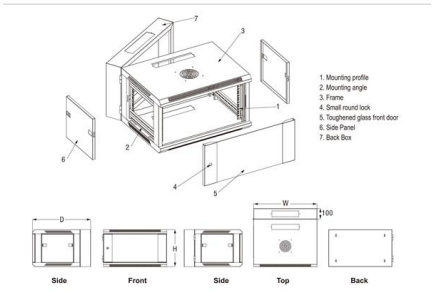
Nvidia is now even beginning to rely on NTT's optical technology, and more than 700 companies worldwide are flocking to it. As AI advances, electricity shortages are becoming a global problem

**Research side 325 COSA NTT device innovation center**

NTT device innovation center is furthering the optoelectronic device study-of-techniques exploitation. This supports all photonics network (APN). Specifically, they are taking charge of the

**NTT, Fujitsu to collaborate on photonics, open systems**

NTT Corporation (NTT) and Fujitsu Ltd. have announced a strategic business alliance that will see them collaborate on the development of technologies that




**A new generation of "optoelectronic fusion" semiconductors may be**

NTT is a world leader in research on "photoelectric fusion". The company successfully developed the first basic technology for transistor circuits using light worldwide, and published it in

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